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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/660,036

09/11/2003

Anson Lee

706618US1

5793

7590

09/27/2004

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EXAMINER

MCCALL, ERIC SCOTT

ART UNIT

PAPER NUMBER

2855

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/660,036	<b>Applicant(s)</b> LEE ET AL.	
	<b>Examiner</b> Eric S. McCall	<b>Art Unit</b> 2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/11/03</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **ENGINE MISFIRE DETECTION**

### **FIRST OFFICE ACTION**

#### **TITLE**

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

#### **CLAIMS**

#### **35 U.S.C. § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scherer et al. (5,889,204).

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With respect to claims 1 and 7, Scherer et al. suggest a method/system of detecting misfire in an engine comprising:

detecting engine speed fluctuations (col. 3, lines 1/2);

determining a linear model based on the engine speed fluctuations (col. 4, lines 48-51);

and

applying a Kalman filter to the linear model to determine parameters of the linear model (col. 2, lines 1-12).

Scherer et al. fail to teach detecting a misfire (engine firing) event in the engine based on the linear model as claimed.

However, it would have been obvious to one having ordinary skill in the art armed with said teach to detect an engine firing event such as a misfire based on the linear model as claimed.

The motivation being that Scherer et al. teach that the object of their device is to determine an engine load even during non-steady-state operation (col. 2, lines 61-65) wherein non-steady-state operation is caused by vibrating piston travel movement (col. 1, lines 34-40). Vibrating piston travel movement is well known to include engine firing events such as misfire events.

With respect to claims 2 and 8, Scherer et al. suggest representing a linear model as a difference equation (col. 5).

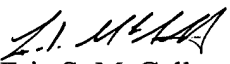
With respect to claims 3 and 9, Scherer et al. suggest the claimed subject matter thereof (col. 2, lines 1+).

With respect to claims 5 and 10, Scherer et al. suggest determining a load compensator signal based on an engine speed and a manifold absolute pressure (col. 4, lines 1-15).

With respect to independent claim 6, said claim parallels that of claim 1. Thus the Applicant's attention is directed to the above comments pertaining to claim 1 and to claim 2.

**CONCLUSION**

Any inquiry concerning this communication should be directed to Eric S. McCall at telephone number (571) 272-2183.

  
Eric S. McCall  
Primary Examiner  
Art Unit 2855  
Sep. 20, 2004